AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-13. (Cancelled)

14. (New) A method of communicating consecutive frames of digital data, said method comprising the steps of:

mapping payload data into complex symbols;

interspersing appropriate pilot symbols; and,

mapping symbols on respective sub-channels;

whereby the insertion of a given pilot configuration into the stream of payload data will give rise to a specific output signal being associated with a given PAPR value;

wherein the digital data comprises OFDM modulated signals comprising a first plurality of payload carrying sub-channels and a second plurality of pilot carrying sub channels;

wherein each individual frame of payload data to be transmitted over the payload channels is associated with a given unique pilot configuration chosen from a sub-set of predetermined pilot configurations, each pilot configuration forming a unique pattern of predetermined pilot symbols and transmitted;

wherein, prior to the transmission of at least one given frame of payload data, each pilot configuration of the sub-set is evaluated with regard to PAPR for the associated frame of payload data, whereby the pilot configuration being associated with the lowest PAPR value is chosen for transmission.

15. (New) The method according to claim 14, wherein the plurality of pilot configurations represent block codes allowing error correction at the receiver.

16. (New) The method according to claim 14, wherein a control word indicative of the pilot configuration associated with a subsequent frame or a particular

frame of a subsequent given order number is inserted into the frame and coded on a predetermined payload channel.

17. (New) The method according to claim 16, wherein for every n-1 frame in a frame period, the complete frame comprising both payload data and the control word and pilot configuration is optimized with regard to PAPR.

18. (New) The method according to claim 17, wherein every n frame in a frame period is not optimized with regard to PAPR.

19. (New) The method according to claim 14, wherein, the sub-carriers carrying the pilot signals are digitally modulated at a lower order (BPSK) than sub-carriers carrying the payload data (QAM).

20. (New) The method according to claim 15, wherein the block code forming pilot configurations have a hamming distance of ≥ 3.

21. (New) The method according to claim 14, wherein the sub-channels are modulated by BPSK or n-QAM modulation.

22. (New) A transmitter comprising:

a mapping stage, mapping payload data on a subset of a plurality of frequency orthogonal sub-carriers;

a plurality of parallel-coupled pilot insertion stages coupled to the mapping stage, each pilot insertion stage inserting a unique pilot configuration on at least another subset of sub-carriers;

a respective inverse fast Fourier transmission stage processing signals from each respective pilot insertion stage;

a PAPR measuring and pilot decision stage, measuring and evaluating PAPR for each unique pilot configuration;

wherein, each individual frame of payload data to be transmitted over the payload channels is associated with a given unique pilot configuration chosen from a sub-set of predetermined pilot configurations, each pilot configuration forming a unique pattern of predetermined pilot symbols, and transmitted; and,

wherein, prior to the transmission of at least one given frame of payload data, each pilot configuration of the sub-set is evaluated with regard to PAPR for the associated frame of payload data, whereby the pilot configuration associated with the lowest PAPR value is chosen for transmission.

23. (New) The transmitter according to claim 22, wherein each unique pilot configuration has a hamming distance of at least three to any other pilot configuration.

24. (New) The transmitter according to claim 22, further comprising a control word insertion stage for inserting a control word in a transmitted frame, the control word being indicative of the pilot configuration used in a frame of any given subsequent order number.

25. (New) A receiver comprising:

a fast Fourier transform stage for transforming baseband signals into frequency signals relating to individual sub-channels; and,

a demodulation stage for performing individual demodulation, such as n-QAM, of the frequency signals into bit estimates;

wherein the receiver further comprises a pilot extraction stage for extracting block coded pilot signals into assumed pilot configurations;

wherein the assumed pilot configuration is provided to a frequency estimator for adjusting the fast Fourier transform stage and to a channel estimator for adjusting the demodulating stage.

26. (New) A receiver comprising:

a fast Fourier transform stage for transforming baseband signals into to frequency signals relating to individual sub-channels; and,

a demodulation stage for performing individual demodulation, such as n-QAM, of the frequency signals into bit estimates;

wherein the receiver further comprises a control word extraction stage for extracting a control word of any subsequent order into an assumed pilot configuration; and,

wherein the assumed pilot configuration is provided to a frequency estimator for adjusting the fast Fourier transform stage and to a channel estimator for adjusting the demodulating stage.